State of Rhode Island State Investment Commission

Absolute Return Portfolio Review as of December 2021



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## Summary



Absolute Return portfolio has achieved its investment objectives over both the short and long term

Most funds in the portfolio have met expectations

#### Notes on analysis:

1.Actual returns and pro forma returns are shown for the portfolio. The actual portfolio returns represents ERSRI actual hedge fund portfolio since inception in November 2011. This portfolio includes both an equity-oriented portfolio and an absolute return-oriented portfolio. The equity-oriented portfolio redeemed beginning in 2016. The Pro forma return represents what the portfolio would have returned using the current managers, the actual returns of the current managers, and the current manager weights.

2. Alpha and beta calculations based on regression calculations and are relative to MSCI ACWI

## Portfolio Objectives



Role in the total fund is to reduce total fund risk by reducing return volatility

## Portfolio objectives:

Low equity beta/correlation

Equity market downside protection

Good alpha generation



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#### Total Return (net of fees)

Pro Forma and Actual portfolios have outperformed HFRI FoF Index over all periods.

The Pro Forma Portfolio has outperformed the Actual Portfolio in all periods.

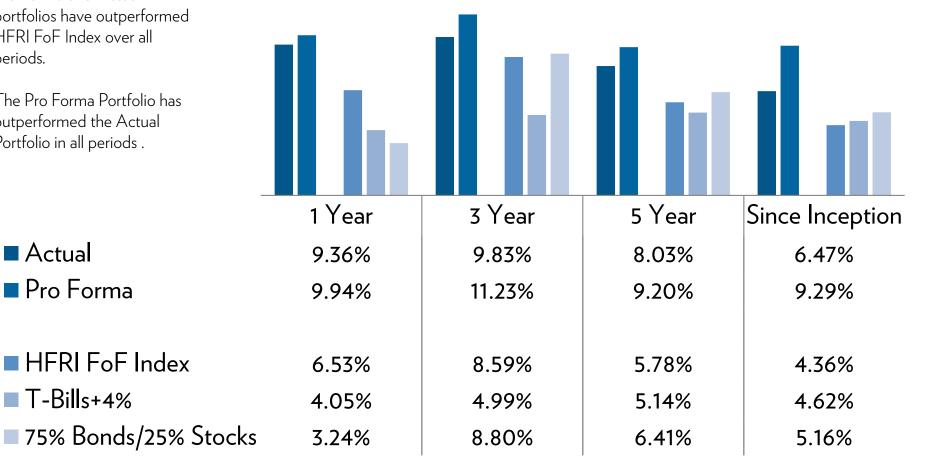
Actual

■ Pro Forma

■ T-Bills+4%

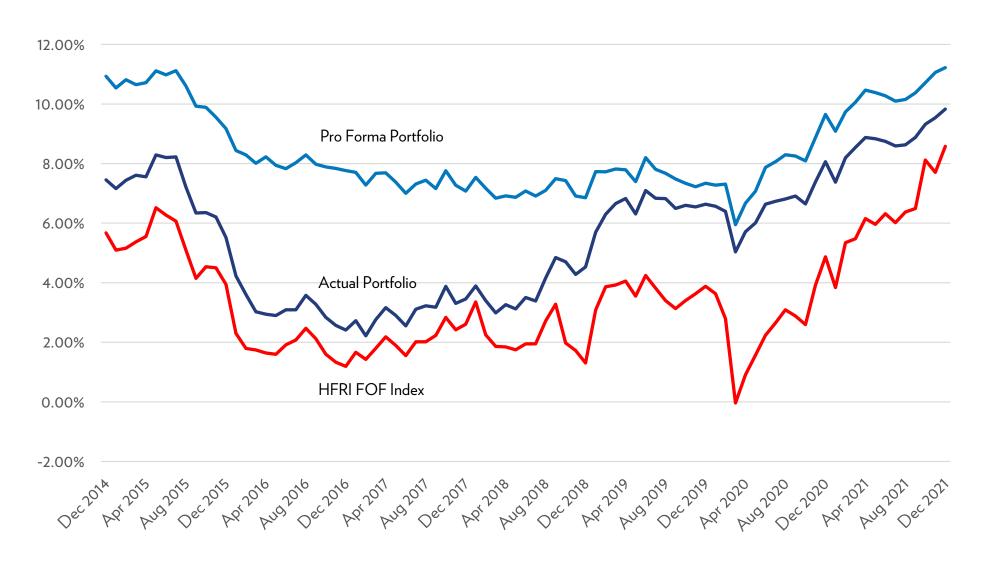
■ HFRI FoF Index

#### Annualized Net Returns through December 2021





#### Three Year Rolling Total Returns (net of fees since inception through 12/31/21)

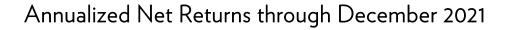


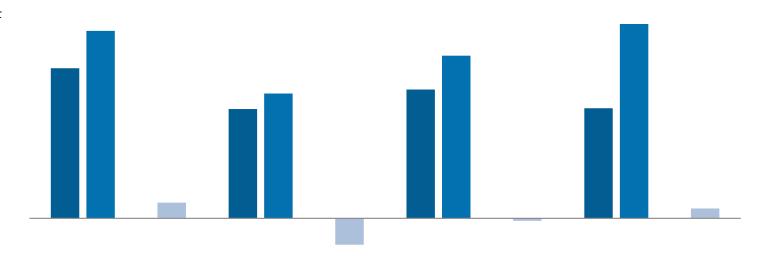


#### Alpha Return (net of fees)

Pro Forma Portfolio has generated strong alpha of 4.7% or higher over all periods

Actual Portfolio has generated less alpha due to legacy managers but more alpha than benchmark



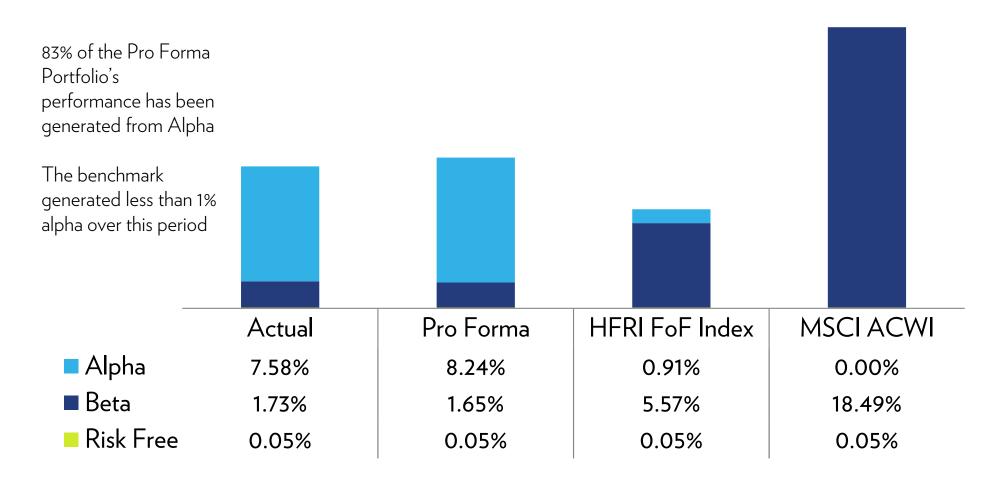


	1 Year	3 Year	5 Year	Since Inception
Actual	5.63%	4.10%	4.83%	4.13%
■ Pro Forma	7.03%	4.68%	6.10%	7.29%
■ HFRI FoF Index	0.59%	-0.99%	-0.09%	0.37%



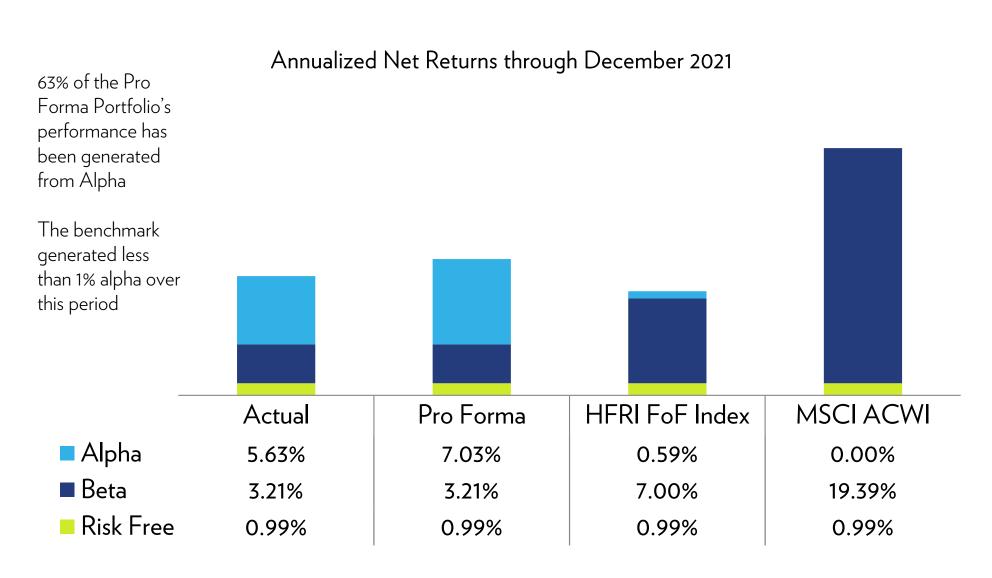
#### Return Attribution - One Year

### Annualized Net Returns through December 2021



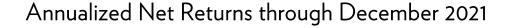


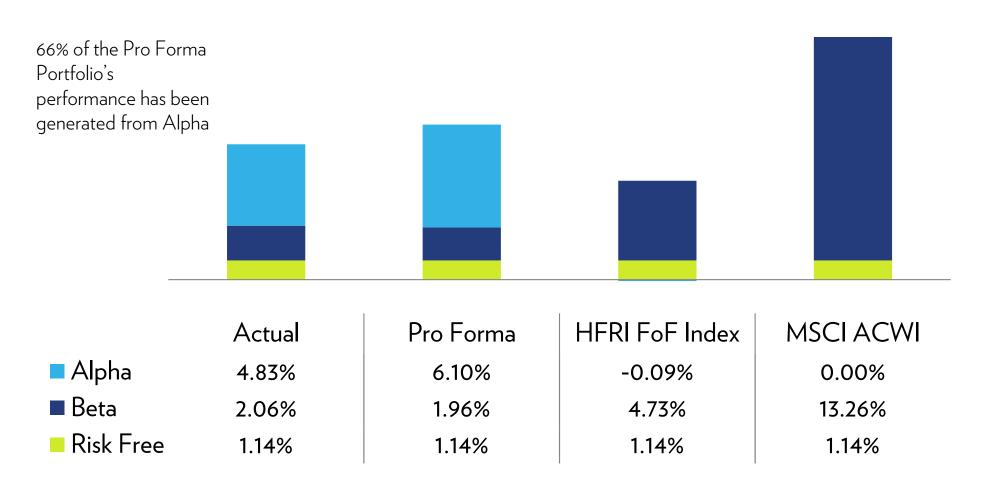
#### Performance Attribution – Three Years





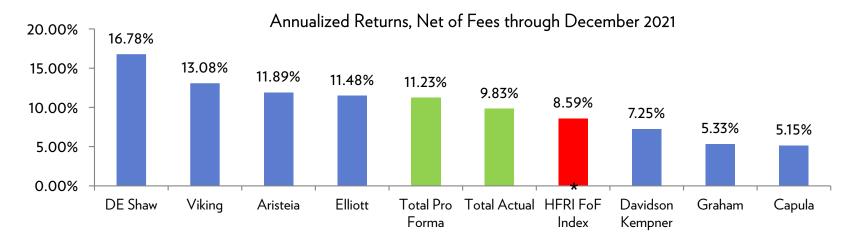
#### Performance Attribution – Five Years







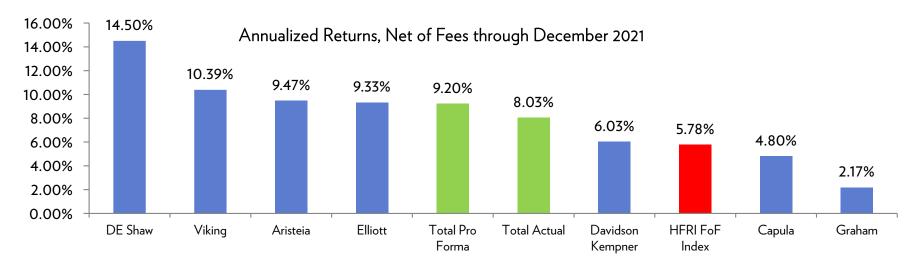
### Manager Performance – Three Years



					Total Pro	Total	HFRI FoF	Davidson		
Three Years	DE Shaw	Viking	Aristeia	Elliott	Forma	Actual	Index	Kempner	Graham	Capula
#months	36	36	36	36	36	36	36	36	36	36
Total Return	16.78%	13.08%	11.89%	11.48%	11.23%	9.83%	8.59%	7.25%	5.33%	5.15%
Total Risk	3.15%	10.79%	6.01%	3.08%	3.56%	3.56%	6.94%	6.38%	10.42%	1.74%
Return/Risk	5.33	1.21	1.98	3.72	3.15	2.76	1.24	1.14	0.51	2.97
Correlation	0.50	0.60	0.53	0.22	0.76	0.77	0.88	0.73	0.64	(0.17)
Beta	0.10	0.38	0.19	0.05	0.17	0.17	0.36	0.28	0.40	(0.01)
Beta Return	1.92%	7.36%	3.76%	0.93%	3.21%	3.22%	7.00%	5.43%	7.68%	-0.21%
Beta Risk	1.69%	6.48%	3.31%	0.82%	2.83%	2.84%	6.17%	4.78%	6.76%	-0.19%
Alpha	13.87%	4.73%	7.14%	9.56%	7.03%	5.63%	0.59%	0.83%	-3.34%	4.37%
Alpha Risk	2.66%	8.62%	5.02%	2.97%	2.16%	2.16%	3.17%	4.22%	7.92%	1.73%
Info Ratio*	5.21	0.55	1.42	3.22	3.25	2.61	0.19	0.20	(0.42)	2.53
Risk-free	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%



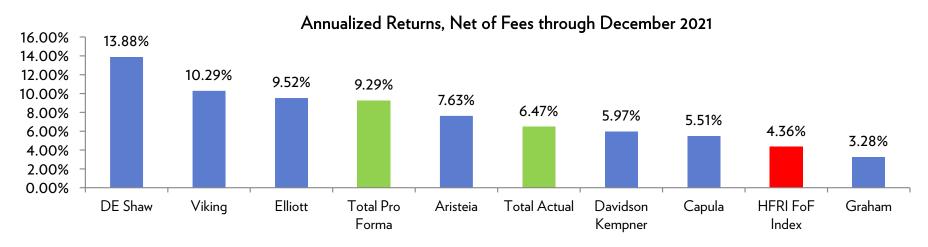
### Manager Performance – Five Years



					Total Pro	Total	Davidson	HFRI FoF		
Five Years	DE Shaw	Viking	Aristeia	Elliott	Forma	Actual	Kempner	Index	Capula	Graham
#months	60	60	60	60	60	60	60	60	60	60
Total Return	14.50%	10.39%	9.47%	9.33%	9.20%	8.03%	6.03%	5.78%	4.80%	2.17%
Total Risk	3.79%	9.15%	5.14%	3.00%	3.05%	3.04%	5.08%	5.90%	1.60%	9.14%
Return/Risk	3.83	1.14	1.84	3.11	3.02	2.65	1.19	0.98	2.99	0.24
Correlation	0.19	0.62	0.44	0.22	0.68	0.73	0.71	0.88	(0.16)	0.58
Beta	0.06	0.39	0.16	0.05	0.15	0.16	0.25	0.36	(0.01)	0.36
Beta Return	0.76%	5.13%	2.10%	0.70%	1.96%	2.06%	3.32%	4.73%	-0.14%	4.79%
Beta Risk	0.85%	5.74%	2.35%	0.78%	2.19%	2.30%	3.72%	5.29%	-0.15%	5.37%
Alpha	12.60%	4.12%	6.23%	7.49%	6.10%	4.83%	1.57%	-0.09%	3.79%	-3.76%
Alpha Risk	3.69%	7.12%	4.57%	2.90%	2.12%	1.98%	3.46%	2.61%	1.60%	7.40%
Info Ratio*	3.41	0.58	1.36	2.58	2.88	2.44	0.45	(0.03)	2.37	(0.51)
Risk-free	1.14%	1.14%	1.14%	1.14%	1.14%	1.14%	1.14%	1.14%	1.14%	1.14%
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#### Manager Performance – Since Inception

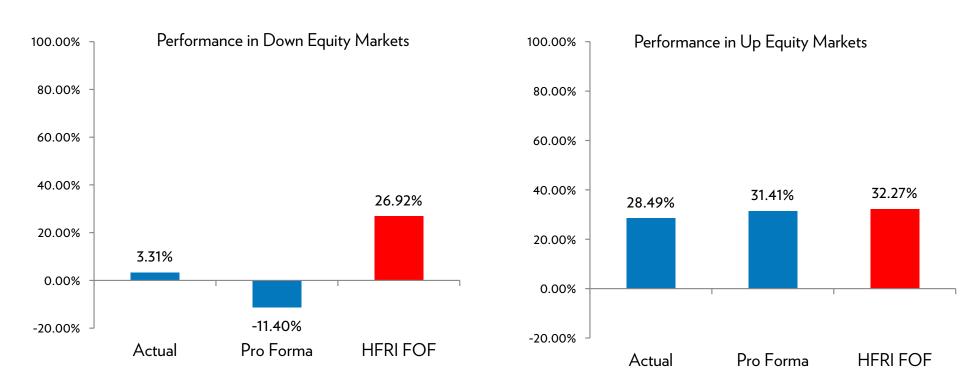


				Total Pro		Total	Davidson		HFRI FoF	
Since Inception	DE Shaw	Viking	Elliott	Forma	Aristeia	Actual	Kempner	Capula	Index	Graham
Total Return	13.88%	10.29%	9.52%	9.29%	7.63%	6.47%	5.97%	5.51%	4.36%	3.28%
Total Risk	4.03%	8.34%	3.39%	2.63%	5.02%	3.16%	3.84%	1.77%	4.82%	7.35%
Return/Risk	3.44	1.23	2.81	3.53	1.52	2.05	1.56	3.11	0.90	0.45
Correlation	0.20	0.55	0.24	0.59	0.34	0.66	0.64	(0.23)	0.85	0.39
Beta	0.07	0.35	0.07	0.12	0.14	0.16	0.19	(0.03)	0.32	0.22
Beta Return	0.71%	3.87%	0.71%	1.37%	1.44%	1.73%	2.03%	-0.30%	3.37%	2.47%
Beta Risk	0.88%	4.58%	0.88%	1.61%	1.78%	2.13%	2.50%	-0.35%	4.15%	2.91%
Alpha	12.55%	5.80%	8.19%	7.29%	5.57%	4.13%	3.32%	5.19%	0.37%	0.18%
Alpha Risk	3.93%	6.97%	3.27%	2.08%	4.70%	2.33%	2.91%	1.74%	2.46%	6.76%
Info Ratio*	3.19	0.83	2.50	3.50	1.19	1.77	1.14	2.99	0.15	0.03
Risk-free	0.62%	0.62%	0.62%	0.63%	0.62%	0.62%	0.62%	0.62%	0.62%	0.63%

Note: Inception date for the portfolio is 11/2011. . Not all managers were in the portfolio as of 11/21.



#### Downside Protection



The Pro Forma Portfolio has produced superior downside capture (negative), generating on average positive returns in down equity markets

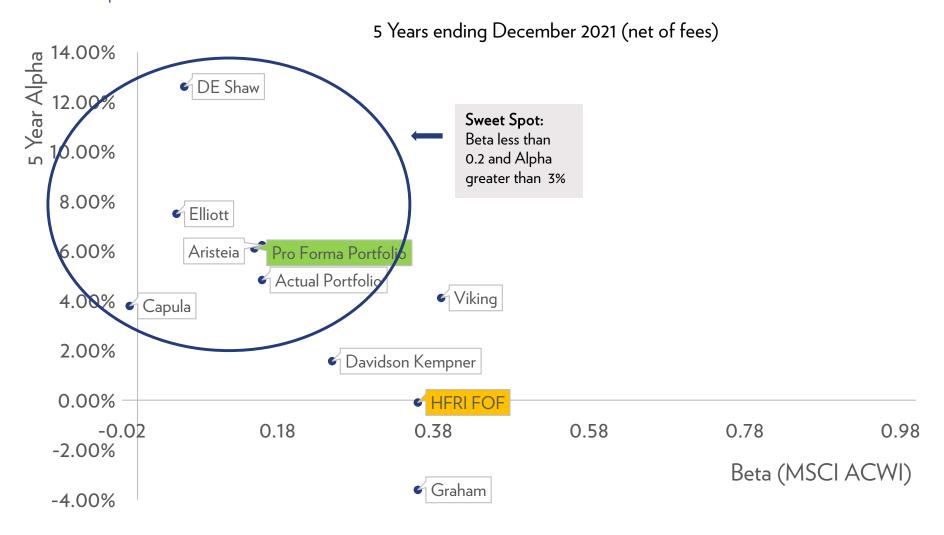
The Pro Forma Portfolio has produced upside market capture comparable to Actual Portfolio and HFRI Fund of Funds Index



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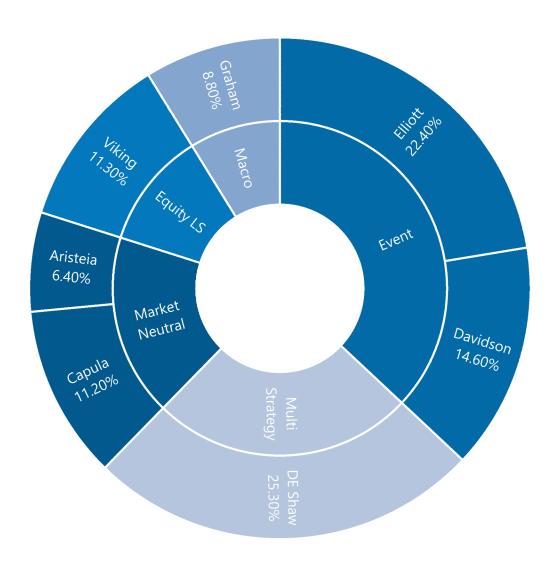


#### Beta and Alpha



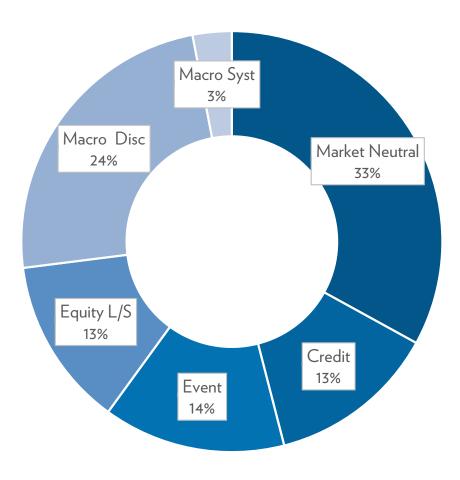


Strategy Exposure by Manager Target Strategy Q4 2021





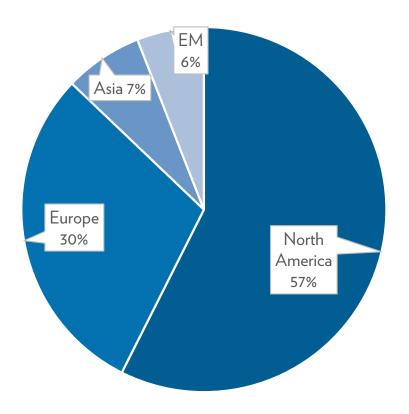
### Strategy Exposures by Manager Positioning Q4 2021



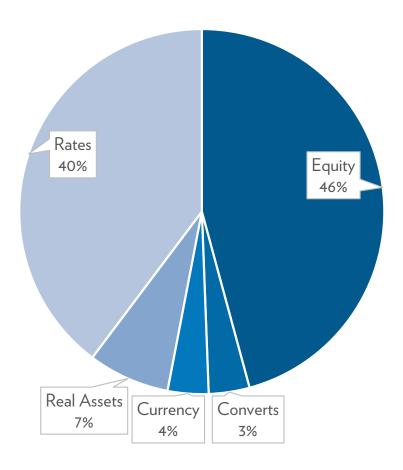


Portfolio Construction by Manager Positioning Q4 2021

Geographic Exposure



## Asset Type Exposure





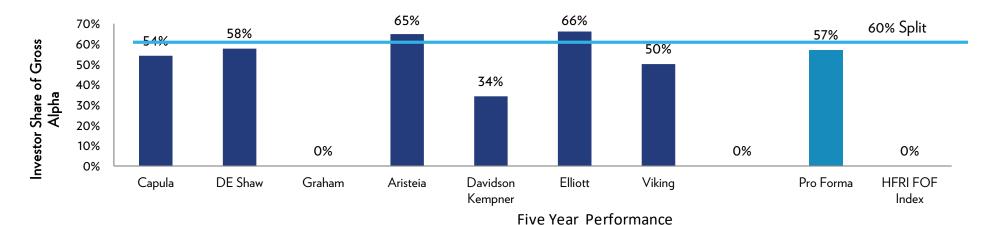
# Fees Evaluation

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### Fee Evaluation



## Share of Alpha



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			Net of	Net of Fees		f Fees		
	Management	Performance	Total		Total		Gross Alp	oha Split
_	Fee	Fee	Return	Alpha	Return	Alpha	Manager	Investor
Capula	2.00%	20.00%	4.80%	3.79%	8.00%	6.99%	46%	54%
DE Shaw	3.00%	30.00%	14.50%	12.60%	23.72%	21.82%	42%	58%
Graham	1.80%	20.00%	2.17%	-3.76%	4.51%	-1.42%	NA	NA
Aristeia	1.00%	20.00%	9.47%	6.23%	12.84%	9.59%	35%	65%
Davidson Kempner	1.50%	20.00%	6.03%	1.57%	9.04%	4.58%	66%	34%
Elliott	1.50%	20.00%	9.33%	7.49%	13.16%	11.32%	34%	66%
Viking	1.50%	20.00%	10.39%	4.12%	14.49%	8.22%	50%	50%
Total Pro Forma	1.93%	22.55%	9.20%	6.10%	13.81%	10.71%	43%	57%
HFRI FOF Index	1.50%	20.00%	5.78%	-0.09%	8.73%	2.86%	103%	-3%

Note: HFRI FOF fees are assumed at industry norm of 1.50% and 20%. Data through Dec 2021